**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

COBBLESTONE WIRELESS, LLC,
 	
    Plaintiff,
 	
v.
 	
T-MOBILE USA, INC.
 	
    Defendant,
 	
NOKIA OF AMERICA CORPORATION,
ERICSSON INC.
 	
    Intervenors.
	§ § § § § § § § § § § § §	CASE NO. 2:22-cv-00477-JRG-RSP
		(Lead Case)
		
		JURY TRIAL DEMANDED

COBBLESTONE WIRELESS, LLC,
 	
    Plaintiff,
 	
v.
 	
AT&T SERVICES INC.; AT&T
MOBILITY LLC; AT&T CORP.,
 	
    Defendants,
 	
NOKIA OF AMERICA CORPORATION,
ERICSSON INC.
 	
    Intervenors.
	§ § § § § § § § § § § § §	CASE NO. 2:22-cv-00474-JRG-RSP
		(Member Case)
		
		JURY TRIAL DEMANDED

COBBLESTONE WIRELESS, LLC,
 	
    Plaintiff,
 	
v.
 	
CELLCO PARTNERSHIP d/b/a
VERIZON WIRELESS,
 	
    Defendant,
 	
NOKIA OF AMERICA CORPORATION,
ERICSSON INC.
 	
    Intervenors.
	§ § § § § § § § § § § § §	CASE NO. 2:22-cv-00478-JRG-RSP
		(Member Case)
		
		JURY TRIAL DEMANDED

**DEFENDANTS' AND INTERVENORS' MOTION FOR PARTIAL SUMMARY
JUDGMENT OF NONINFRINGEMENT OF THE ASSERTED CLAIMS OF
U.S. PATENT NO. 10,368,361**

████████████████████████████

TABLE OF CONTENTS

███████████████████████████

TABLE OF AUTHORITIES

███████████████████████████

Table of Exhibits

Exhibit	Description
A	United States Patent No. 10,368,361 ("'361 Patent")
B	Excerpts of Deposition Transcript of Tim Williams, June 19, 2024 ("Williams Dep. Tr.")
C	Excerpts of Appendix A to Expert Report of Dr. Tim Williams, dated May 24, 2024 ("Williams Rpt., App'x A")
D	Excerpts of Ex. C to Cobblestone's AT&T Infringement Contentions (Ex. C to AT&T Infringement Contentions)
E	Excerpts of Appendix C to Expert Report of Dr. Daniel van der Weide, dated June 14, 2024 ("Van Der Weide Rpt., App'x C")
F	Excerpts of Deposition Transcript of Bevan Smith, May 1, 2024 (T-Mobile 30(b)(6)) ("Smith Dep. Tr.")
G	Excerpts of Deposition Transcript of Haomin Li, April 26, 2024 (Ericsson 30(b)(6)) ("Li Dep. Tr.")

████████████████████████

I.   INTRODUCTION

United States Patent No. 10,368,361 (the "'361 Patent") is directed to improving how resources are allocated for uplink and downlink communications. The '361 Patent criticized prior art schemes, including TDD schemes, as being unable to handle the constantly changing needs of modern communications systems. Specifically, the '361 Patent criticizes prior art TDD schemes for using fixed uplink/downlink allocations and did not allow for updated allocations based on current traffic demand. To allegedly solve this problem, the '361 Patent proposes an *adaptive* resource allocation scheme that allows flexibility to assign resources to uplink or downlink based on traffic demand. Central to this scheme is the use of a "shared resource pool," which includes resources that can be allocated to either uplink or downlink based on need (referred to as an "updated directional allocation").

Notably, Defendants and Intervenors were concerned that Cobblestone would accuse a system that used fixed uplink/downlink allocations and take the position that the resources in the "shared resource pool" did not have to be available for uplink or downlink. The Court's claim construction of "shared resource pool" resolved this issue definitively. The resources in the "shared resource pool" must be available to be allocated for uplink or downlink.

Undeterred by the Court's construction, Cobblestone's infringement theory focuses on a TDD scheme that still uses a fixed uplink/downlink allocation or configuration. Specifically, Cobblestone has alleged that a Bandwidth Part Adaptation feature for TDD in 5G networks infringes the claims of the '361 Patent. It is *undisputed* that, in 5G TDD (like the prior art), the configuration of which resources can be used for uplink and downlink is fixed, and Bandwidth Part Adaptation does not change how those resources are allocated between uplink and downlink. Accordingly, Cobblestone cannot show that the accused products have the required "shared

1

resource pool" or schedule a resource "based on the updated directional allocation of frequency spectrum resources."

Accordingly, the Court should grant Defendants' and Intervenors' motion for summary judgment of noninfringement.

II.   STATEMENT OF ISSUES TO BE DECIDED BY THE COURT

Whether Cobblestone has failed to establish infringement of the Asserted Claims of the '361 Patent as a matter of law.

III.   LEGAL STANDARD

"Summary judgment is appropriate when, drawing all justifiable inferences in the non-movant's favor, there exists no genuine issue of material fact and the movant is entitled to judgment as a matter of law." *Toshiba Corp., v. Imation Corp.*, 681 F.3d 1358, 1361 (Fed. Cir. 2012); Fed. R. Civ. P. 56. "A fact is material if it would affect the outcome of the case, and a dispute is genuine if the evidence is such that a reasonable jury could return a verdict for the non-moving party." *Gree, Inc. v. Supercell Oy*, No. 2:19-cv-00200-JRG-RSP, 2021 U.S. Dist. LEXIS 82367, at *13 (E.D. Tex. Apr. 16, 2021). Summary judgment is warranted if the non-movant bears the burden of proof yet "fails to make a showing sufficient to establish the existence of an element essential to that party's case." *Celotex Corp. v. Catrett,* 477 U.S. 317, 322 (1986).

On summary judgment, where the nonmovant bears the burden of proof, the movant is only required to point out the absence of evidence supporting the movant's case. *PerdiemCo, LLC v. IndusTrack LLC*, No. 2:15-cv-727-JRG-RSP, 2016 WL 8189022, at *1 (E.D. Tex. Nov. 7, 2016). "Summary judgment is appropriate in any case 'where critical evidence is so weak or tenuous on an essential fact that it would not support a judgment in favor of the nonmovant.'" *Little v. Liquid Air Corp.*, 37 F.3d 1069, 1075 (5th Cir. 1994) (quoting *Armstrong v. City of Dallas*, 997 F.2d 62 (5th Cir. 1993)). When a claim limitation is missing in an accused device, the Court must grant

summary judgment of noninfringement. *See Cummins-Allison Corp. v. Glory, Ltd.,* No. 2:03-CV-

358-TJW, 2005 U.S. Dist. LEXIS 38857, at *5 (E.D. Tex. Dec. 12, 2005).

IV.   BACKGROUND

A.   Prior Art TDD Resource Allocation Configurations for Uplink and Downlink Were Flawed

The '361 Patent attempts to address the alleged failure of prior art resource allocation

schemes to address the "bursty" and "asymmetric" nature of wireless communication. Ex. A ('361

Patent) at 3:10-28.[1] The '361 Patent explains that prior art resource allocation schemes, such as

time division duplex (TDD), were "unable to employ available frequency spectrum resources when

uplink and downlink traffic is constantly changing." Ex. A ('361 Patent) at 3:32-38. In TDD

schemes, uplink and downlink channels can use the same frequency resources, but uplink and

downlink channels are allocated different time instances, such as different time slots or subframes.

Ex. B (Williams Dep. Tr.) at 91:3-7. The '361 Patent explains that the problem with using a TDD

scheme is that it may have only have "a limited number of different configurations available,

typically seven, for the allocation of subcarriers 201-206 as uplink and downlink channels," and

as a result cannot adapt to changes in the disparity between the need for uplink or downlink

channels at any particular time. Ex. A ('361 Patent) at 6:18-21.

Figure 2B is an example of a TDD configuration of uplink and downlink resources. Ex. A

('361 Patent) at 5:11-14.

---

[1] "Bursty traffic may be characterized by unpredictable and sudden increases and decreases in volume," and "[a]symetric traffic may be characterized by a large disparity between total volume associated with uplink channels and downlink channels at a particular time." Ex. A ('361 Patent) at 3:10-28.
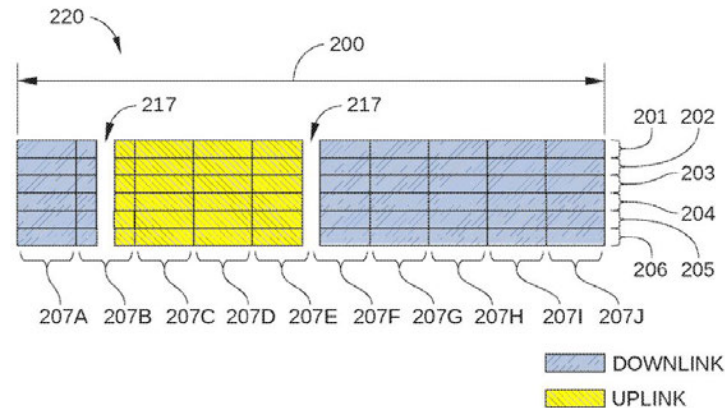
Ex. A ('361 Patent) at Fig. 2 (annotations added).

Here, the vertical axis shows frequency resources (*i.e.*, subcarriers 201-206), and the horizontal axis shows time (*i.e.*, a radio frame split into a number of subframes). Ex. A ('361 Patent) at 5:63-6:13. Downlink and uplink channels can be allocated to any subcarrier (*i.e.*, any frequency resource) but downlink and uplink channels cannot be allocated during the same subframe (*i.e.*, at the same time). *Id.* In other words, downlink channels can only be allocated resources in the blue subframes, and uplink channels can only be allocated resources in yellow subframes.

B.   '361 Patent Provides For Adaptive Scheme To Solve Problem with Fixed TDD Uplink and Downlink Configurations

The '361 Patent purports to address this prior art TDD problem by providing for an "*adaptive*" resource allocation scheme that does not use these fixed uplink/downlink configurations. '361 Patent at Title; Ex. C (Williams Rpt., App'x A) at ¶ 49 (opining that "[t]he key innovation in this patent is the adaptive allocation of frequency spectrum resources."). This adaptive resource allocation scheme is enabled using three different resource pools: (i) an uplink resource pool, (ii) a downlink resource pool, and (iii) a shared resource pool. *Id*. As Plaintiff's expert Dr. Williams opined, "[h]igh-quality resources are prioritized for uplink and downlink channels, while lower-quality resources are placed in the shared [resource] pool." *Id*. The '361

██████████████████

Patent provides that resources in the downlink resource pool and uplink resource pool are allocated to uplink and downlink channels, and "[i]f additional resources are needed, the base station can dynamically allocate resources from the shared [resource] pool to either uplink or downlink channels." *Id*. Thus, as Dr. Williams acknowledges, the point of the shared resource pool is that *each of* the resources assigned to that pool can be allocated to an uplink or a downlink channel. The shared resource pool thus provides the flexibility that the '361 Patent alleges was missing from the prior art.

Cobblestone has alleged that Defendants infringe independent claim 10 and dependent claims 12 and 15 of the '361 Patent. These claims generally track the disclosure in the specification as they require: (i) determining which resources are suboptimal (referred to as the "first frequency spectrum resource"), (ii) assigning suboptimal resources to a "shared resource pool;" (iii) scheduling the optimal resources ("second frequency spectrum resources") for uplink or downlink channels based on traffic needs; (iv) determining an "updated directional allocation" to identify what traffic needs remain; and, finally, (v) assigning resources from the shared resource pool to uplink or downlink channels based on the updated directional allocation.

For reference, claim 10 is reproduced below with the relevant claim elements emphasized:

10. A wireless base station for a wireless communication network, the wireless base station comprising:

a quality status module configured to determine a respective quality status of a first frequency spectrum resource and a second frequency spectrum resource, wherein each of the first frequency spectrum resource and the second frequency spectrum resource are associated with an air interface that is available for use by the wireless base station for an uplink channel or a downlink channel;

a processor coupled to the quality status module and configured to:

determine, based on the quality status of the first frequency spectrum resource, that the first frequency spectrum resource is a sub-optimal resource, for the uplink channel and the downlink channel, relative to other

frequency spectrum resources that are available for use by the wireless base station; and

in response to the determination that the first frequency spectrum resource is the sub-optimal resource, *assign the first frequency spectrum resource to a shared resource pool; and*

a scheduler module coupled to the processor and configured to:

schedule the second frequency spectrum resource for the uplink channel or the downlink channel based on an initial directional allocation of frequency spectrum resources for the wireless base station;

determine an updated directional allocation of frequency spectrum resources for the wireless base station after the second frequency spectrum resource is scheduled for the uplink channel or the downlink channel; and

schedule the first frequency spectrum resource based on the updated directional allocation of frequency spectrum resources for the wireless base station.

Ex. A ('361 Patent) at Cl. 10.

C.   Claim Construction Order

The use of a "shared resource pool" is central to the purported invention, and the meaning

of this term was disputed during the claim construction process. The Court noted that "the parties

agree the 'shared resource pool' contains resources that must be available for both uplink and

downlink purposes." Dkt. 131 at 23. The Court then construed "shared resource pool" as "a pool

containing one or more frequency spectrum resources that can be scheduled for either uplink or

downlink channels." Dkt. 131 at 24.

The Court noted the following regarding this construction:

Although the Court opts to use "or" rather than "and" in its construction, that does not mean the "shared resource pool" might contain resources that are limited to use only for downlink transmission or only for uplink transmission. *That would eviscerate the notion of the resources being "shared" with the uplink and downlink resource pools as needed.*

Dkt. 131 at 23.

6

[black redaction bar]

D. Cobblestone Accuses Bandwidth Part Adaptation Feature of Nokia and Ericsson Base Stations of Infringement

Despite Cobblestone's agreement during claim construction that each resource in the shared resource pool must be available for uplink and downlink, Cobblestone has accused a scheme that mirrors the prior art TDD scheme of infringement.

Cobblestone alleges that features of the 5G NR standard referred to as Supplementary Uplink (SUL) and Bandwidth Part Adaption infringe the Asserted Claims of the '361 Patent. Ex. D (Ex. C to AT&T Infringement Contentions) at 1. **[black redaction bar]**

[black redaction bar]

[black redaction bar]

[black redaction bar] Bandwidth part adaptation is a feature that allows a user equipment to limit which parts of a subframe are searched for a downlink channel. *See, e.g.,* Ex. C (Williams Rpt., App'x A) at ¶¶ 816, 866-67. Bandwidth part adaption thus controls the "search space" for a particular user equipment. Ex. C (Williams Rpt., App'x A) at ¶ 816.

[black redaction bar]

[black redaction bar]

[black redaction bar]

The accused Bandwidth Part Adaptation is only implemented in a TDD scheme. *See, e.g.,* Ex. C (Williams Rpt., App'x A) at ¶¶ 210, 214, 220. Like the prior art TDD scheme described in the '361 Patent, the 5G TDD scheme "uses a single frequency band for both uplink and downlink transmissions, but separates them in time." Ex. C (Williams Rpt., App'x A) at ¶ 143. This is

---

[2] Dr. Williams Report references features related to carrier aggregation, but Dr. Williams confirmed that he is only relying on carrier aggregation features to the extent those features are used with Bandwidth Part Adaptation. Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 35-41.

██

accomplished by dividing time into subframes and allocating each subframe to either uplink or downlink.[3] Ex. C (Williams Rpt., App'x A) at ¶ 827. In 5G NR, the base station defines the pattern or "configuration" of which subframes can be used for uplink and downlink. Ex. C (Williams Rpt., App'x A) at ¶ 827. ████████████████████████████████

██

██

███████████████████████████████. Fixing the uplink/downlink configuration is intended to avoid a problem with "cross link interference," which is interference caused by two neighboring base stations that are not synchronized in uplink and downlink transmissions. *Id.* at ¶¶ 20-29.

██

██

██

██

██

██

██

██

███

██

██

---

[3] A subframe can further be divided into slots, but the same holds true. Each slot is designated as an uplink or a downlink slot. Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 35-41.

██

███

███

███

███

███

████████████████████████████████

Bandwidth Part Adaptation, however, has nothing to do with how subframes are designated as uplink or downlink.

Bandwidth Part Adaption of Switching cannot be used to change the Uplink/Downlink Configuration in a TDD Scheme. Because the uplink and downlink resource allocation is fixed and does not change dynamically, bandwidth part adaptation has no impact on how subframes are allocated to either uplink or downlink. Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 20-51.

This point was made clear by Plaintiff's expert, Dr. Williams:

Q. Okay. Now, you understand in 5G, when using TDD, that individual subframes will be configured to either be downlink subframes or uplink subframes, correct?

A. That's my understanding.

Q. Okay. And the way that a subframe is designated for downlink or uplink is based on the uplink/downlink configuration for the TDD frame; is that right?

A. That's my understanding.

Q. Okay. You understand that bandwidth part adaptation does not change the uplink/downlink configurations of a TDD frame, correct?

A. It doesn't change the structure of the frame in the implementation, correct.

. . .

Q. So switching from one type of bandwidth part to another would not change which subframes are used for uplink and which subframes are used for downlink in TDD, correct?

███

A. That's my understanding.

Ex. B (Williams Dep. Tr.) at 95:24-96:14, 96:21-97:1; *see also id*. at 101:25-102:13, 125:3-126:11, 129:1-4.

For example, if a TDD frame is configured such that the first subframe is a downlink subframe, switching from one type of bandwidth part to a different type of bandwidth part cannot change that downlink subframe to an uplink subframe. Ex. B (Williams Dep. Tr.) at 131:8-21.

Each individual BWP (*e.g.*, BWP1) is either an uplink bandwidth part or a downlink bandwidth part. Ex. B (Williams Dep. Tr.) at 110:18-22; *see also* Ex. C (Williams Rpt., App'x A) at ¶¶ 817, 887, 892. Thus, a downlink BWP can only be allocated within a subframe in TDD that has been designated as a downlink subframe, and an uplink BWP can only be allocated in an uplink subframe. Ex. B (Williams Dep. Tr.) at 97:21-98:11. And Bandwidth Part Adaptation does not dictate which subframes are available for uplink, and which are available for downlink.

V.   STATEMENT OF UNDISPUTED MATERIAL FACTS ("SUMF")

1.   Cobblestone has asserted Claims 10, 12, and 15 of the '361 Patent. Ex. C (Williams Rpt., App'x A) at ¶ 28.

2.   Cobblestone only alleges that Ericsson and Nokia base stations ("the Accused Nokia and Ericsson Products") infringe the asserted claims of the '361 Patent. Ex. C (Williams Rpt., App'x A) at ¶¶ 211-23.

3.   ███

███

4.   Cobblestone is no longer pursuing an infringement theory based on Supplementary uplink. Ex. B (Williams Dep. Tr.) at 86:3-18, 95:3-14.

5.   Dr. Williams did not form any opinion regarding whether any features other than "bandwidth part adaption" infringe the claims of the '361 Patent. Ex. B (Williams Dep. Tr.) at

██

86:3-18, 95:3-14.

6.   ██

██

██

███████████████████

7.   In 5G TDD, resources are organized into subframes. Ex. E (Van Der Weide Rpt., App'x C) at ¶ 35.

8.   In 5G TDD, individual subframes are configured to either be downlink subframes or uplink subframes. Williams Dep. at 95:24-96:14, 96:21-97:1; Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 20-51.

9.   Each subframe is designated for downlink or uplink based on the uplink/downlink configuration in TDD. Williams Dep. at 95:24-96:14, 96:21-97:1; Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 20-51.

10.   ██

██

██████████████████████████████████

11.   ██

██

██

███████████████████████████████████████

12.   ██

██

██████████████████████

█████████████████████████████████████

13.   Cobblestone is not asserting a theory under the doctrine of equivalents.

VI.   ARGUMENT

The Court should grant summary judgment of noninfringement as to the Asserted Claims because no reasonable jury could conclude that Cobblestone can carry its burden. As discussed above, the '361 Patent was specifically designed to address problems with the use of TDD uplink/downlink configurations that could not change to address traffic need. '361 Patent at 3:10-38. It is undisputed that the accused bandwidth part feature, however, is implemented in a 5G TDD scheme that still uses fixed TDD uplink/downlink configurations. SUMF ¶¶ 6, 8-9. Accordingly, Cobblestone cannot show that the Accused Ericsson and Nokia Products have a "shared resource pool" or "schedule the first frequency spectrum resource based on the updated directional allocation of frequency spectrum resources for the wireless base station."

Claim 10 requires that, in response to a determination that the first frequency spectrum resource is suboptimal, the resource is assigned to a shared resource pool. '361 Patent at cl. 10. The point of the shared resource pool is that its resources are available for use in downlink or uplink, such that a base station has the ability to allocate those resources to uplink or downlink based on an "updated directional allocation" after the "optimal" or "high-quality" resources are allocated. Ex. A ('361 Patent) at Cl. 10, 9:3-29; Ex. C (Williams Rpt., App'x A) at ¶ 49; Ex. E (Van Der Weide Rpt., App'x C) at ¶¶ 8, 102, 104.

The Court acknowledged this role of the "shared resource pool" when it construed the term to mean "a pool containing one or more frequency spectrum resources that can be scheduled for either uplink or downlink channels." Dkt. 131 at 24. As noted earlier, the Court explained that its construction did "not mean the 'shared resource pool' might contain resources that are limited to use only for downlink transmission or only for uplink transmission" because "[t]*hat would*

███

eviscerate the notion of the resources being "shared" with the uplink and downlink resource pools as needed." Dkt. 131 at 23.

Here, it is undisputed that the uplink/downlink configuration for TDD is fixed. SUMF ¶¶ 7-9. Specifically, it is undisputed that each of the subframes is configured as an uplink or downlink subframe, and there is no ability to designate a subframe as a flexible subframe that allows the base station to choose whether to use that subframe for uplink or downlink. SUMF ¶¶ 7-9. Accordingly, Cobblestone cannot show that the Accused Nokia and Ericsson Products have a pool containing one or more frequency spectrum resources that can be scheduled for either uplink or downlink channels as required by the Court's Construction.

Similarly, Cobblestone cannot show that the Accused Nokia and Ericsson Products are capable of "schedule[ing] the first frequency spectrum resource based on the updated directional allocation of frequency spectrum resources for the wireless base station." ███████████████

███

███

███

██████████████████████████████ Each resource thus is configured for either downlink transmission or uplink transmission based on a fixed uplink/downlink configuration and cannot be "scheduled" for use based on an "updated directional allocations" as required by the claims.

Accordingly, no reasonable jury could find that the Accused Nokia and Ericsson Products infringe the Asserted Claims of the '361 Patent.[4]

---

[4] Cobblestone likewise submitted no evidence for SUL. SUMF ¶¶ 3-5.

██

VII.   CONCLUSION

For these reasons, Defendants and Intervenors respectfully submits that summary judgment

of noninfringement as to the Asserted Claims of the '361 Patent is appropriate.

Dated: July 3, 2024

Respectfully submitted,

/s/ David S. Frist
David S. Frist (GA Bar No. 205611)
John D. Haynes (GA Bar No. 340599)
Emily C. Welch (GA Bar No. 606071)
Michael C. Deane (GA Bar No. 497195)
Sloane S. Kyrazis (GA Bar No. 878240)
ALSTON & BIRD LLP
1201 West Peachtree Street, Suite 4900
Atlanta, GA 30309
Phone: (404) 881-7000
Fax: (404) 881-7777
Email: david.frist@alston.com
john.haynes@alston.com
emily.welch@alston.com
michael.deane@alston.com
sloane.kyrazis@alston.com

Ross R. Barton (NC Bar No. 37179)
ALSTON & BIRD LLP
101 South Tryon Street
Suite 4000
Charlotte, NC 28280-4000
Telephone: (704) 444-1000
Facsimile: (704) 444-1111
Email: ross.barton@alston.com

Theodore Stevenson, III (TX Bar No.
19196650)
ALSTON & BIRD LLP
2200 Ross Avenue, Suite 2300
Dallas TX 75201
Phone: (214) 922-3400
Fax: (214) 922-3899
Email: ted.stevenson@alston.com

Katherine G. Rubschlager (CA Bar. No.
328100)

14

ALSTON & BIRD LLP
560 Mission St., Suite 2100
San Francisco, CA 94105
Phone: (415) 243-1000
Fax: (415) 243-1001
Email: katherine.rubschlager@alston.com

Deron R. Dacus
THE DACUS FIRM
821 E SE Loop 323 Suite 430
Tyler, TX 75701
Phone: (903) 705-1117
Facsimile: (903) 581-2543
Email: ddacus@dacusfirm.com

*Attorneys for Defendants AT&T Services,
Inc., AT&T Mobility LLC, and AT&T
Corp.; Defendant T-Mobile USA, Inc.;
Defendant Cellco Partnership d/b/a
Verizon; Intervenor Ericsson Inc.; and
Intervenor Nokia of America Corporation*

CERTIFICATE OF SERVICE

I hereby certify that the foregoing document was served by e-mail on July 3, 2024 on all

counsel who have consented to electronic service.

/s/ David S. Frist
David S. Frist

16